

WHAT IS CLAIMED IS:

1. A low temperature storage cabinet having a freezing cycle system composed of a compressor, a condenser, a throttle and an evaporator, a cabinet temperature sensor for detecting an inside temperature of the cabinet and for producing an electric signal indicative of the detected inside temperature, compressor control means responsive to the electric signal from said temperature sensor for activating the compressor in the freezing cycle system in response to rise of the inside temperature of the cabinet and for deactivating the compressor in response to a fall in the inside temperature of the cabinet, and an electric fan provided in the cabinet for circulating cooled air in the interior of the cabinet,

wherein the low temperature storage cabinet comprises:

refrigerant temperature detection means provided in the freezing cycle system to detect a temperature of refrigerant in the freezing cycle system; and

fan control means for controlling operation of said electric fan in the cabinet in accordance with a temperature of refrigerant detected by said detection means during deactivation of said compressor and for decreasing the rate of operation of said electric fan in accordance with a decrease of the refrigerant temperature.

6 2. A low temperature storage cabinet having a freezing cycle system composed of a compressor, a condenser, a throttle and an evaporator, a cabinet temperature sensor for detecting an inside temperature of the cabinet and for producing an electric signal indicative of the detected

inside temperature, compressor control means responsive to the electric signal from said temperature sensor for activating the compressor in the freezing cycle system in response to rise of the inside temperature of the cabinet and for deactivating the compressor in response to a fall in the inside temperature of the cabinet, and an electric fan provided in the cabinet for circulating cooled air in the interior of the cabinet,

wherein the low temperature storage cabinet comprises refrigerant pressure detection means provided in the freezing cycle system to detect pressure of refrigerant in the freezing cycle system; and

fan control means for controlling operation of said electric fan in the cabinet in accordance with refrigerant pressure detected by said pressure detection means during deactivation of said compressor and for decreasing the rate of operation of said electric fan in accordance with a decrease of the refrigerant pressure.

7 8. A low temperature storage cabinet having a freezing cycle system composed of a compressor, a condenser, a throttle and an evaporator, a cabinet temperature sensor for detecting an inside temperature of the cabinet and for producing an electric signal indicative of the detected inside temperature, compressor control means responsive to the electric signal from said temperature sensor for activating the compressor in the freezing cycle system in response to rise of the inside temperature of the cabinet and for deactivating the compressor in response to a fall in the inside temperature of the cabinet, and an electric fan provided in the cabinet for circulating cooled air in the

interior of the cabinet.

wherein the low temperature storage cabinet comprises:
ambient temperature detection means provided on the
cabinet to detect a temperature of outside air; and
fan control means for controlling operation of said
electric fan in the cabinet in accordance with a temperature
of outside air detected by said ambient temperature detection
means during deactivation of said compressor and for
decreasing the rate of operation of said electric fan in
accordance with a decrease of the temperature of outside
air.

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A. A low temperature storage cabinet as claimed in Claim 1, wherein said fan control means comprises means for intermittently operating said electric fan in the cabinet during deactivation of said compressor and for changing the operation time and the stopping time of said electric fan to control the rate of operation of said electric fan in accordance with the refrigerant temperature.

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5. A low temperature storage cabinet as claimed in
Claim 1, wherein said fan control means comprises means for
selectively effecting continual operation of said electric
fan or intermittent operation of said electric fan during
deactivation of said compressor to control the rate of
operation of said electric fan in accordance with the
refrigerant temperature.

8. A low temperature storage cabinet as claimed in
Claim 1, wherein a plurality of electric fans are provided
in the cabinet for circulating cooled air in the interior of
the cabinet, and wherein said fan control means comprises
means for selectively operating said electric fans during
deactivation of said compressor to control the rate of
operation of said electric fans in accordance with the
refrigerant temperature.

7. A low temperature storage cabinet as claimed in Claim 1, wherein said fan control means comprises means for controlling the rotation speed of said electric fan during deactivation of said compressor to control the rate of operation of said electric fan in accordance with the refrigerant temperature.

8. A low temperature storage cabinet having a freezing cycle system composed of a compressor, a condenser, a throttle and an evaporator, a cabinet temperature sensor for detecting an inside temperature of the cabinet and for producing an electric signal indicative of the detected inside temperature, temperature setting means for setting an inside temperature of the cabinet, compressor control means responsive to the electric signal from said cabinet temperature sensor for activating said compressor when the inside temperature of the cabinet rises in a nominal value more than an inside temperature set by said temperature setting means and for deactivating said compressor when the inside temperature of the cabinet falls in the nominal value less than the inside temperature set by said temperature setting means, and an electric fan provided in the cabinet

for circulating cooled air in the interior of the cabinet, wherein the low temperature storage cabinet comprises: refrigerant temperature detection means provided in the freezing cycle system for detecting a temperature of refrigerant in the freezing cycle system;

first fan control means for operating said electric fan in the cabinet at a predetermined rate of operation during deactivation of said compressor when the inside temperature set by said temperature setting means is less than a predetermined temperature; and

second fan control means for decrease the rate of operation of said electric fan in accordance with a decrease of the refrigerant temperature detected by said refrigerant temperature detection means during deactivation of said compressor when the inside temperature set by said temperature setting means is more than the predetermined temperature.

9. A low temperature storage cabinet having a freezing cycle system composed of a compressor, a condenser, a throttle and an evaporator, cabinet temperature sensor for detecting an inside temperature of the cabinet and for producing an electric signal indicative of the detected inside temperature, temperature setting means for setting an inside temperature of the cabinet, compressor control means responsive to the electric signal from said cabinet temperature sensor for activating said compressor when the inside temperature of the cabinet rises in a nominal value more than an inside temperature set by said temperature setting means and for deactivating said compressor when the inside temperature of the cabinet falls in the nominal value

less than the inside temperature set by said temperature setting means, and an electric fan provided in the cabinet for circulating cooled air in the interior of the cabinet.

wherein the low temperature storage cabinet comprises:

refrigerant pressure detection means provided in the freezing cycle system for detecting pressure of refrigerant in the freezing cycle system;

first fan control means for operating said electric fan in the cabinet at a predetermined rate of operation during deactivation when the inside temperature set by said temperature setting means is less than a predetermined temperature; and

second fan control means for decreasing the rate of operation of said electric fan in accordance with a decrease of the refrigerant pressure detected by said refrigerant pressure detection means during deactivation of said compressor when the inside temperature set by said temperature setting means is more than the predetermined temperature.

10. A low temperature storage cabinet having a freezing cycle system composed of a compressor, a condenser, a throttle and an evaporator, cabinet temperature sensor for detecting an inside temperature of the cabinet and for producing an electric signal indicative of the detected inside temperature, temperature setting means for setting an inside temperature of the cabinet, compressor control means responsive to the electric signal from said cabinet temperature sensor for activating said compressor when the inside temperature of the cabinet rises in a nominal value more than an inside temperature set by said

temperature setting means and for deactivating said compressor when the inside temperature of the cabinet falls in the nominal value less than the inside temperature set by said temperature setting means, and an electric fan provided in the cabinet for circulating cooled air in the interior of the cabinet,

wherein the low temperature storage cabinet comprises:
ambient temperature detection means for detecting a
temperature of outside air;

first fan control means for operating said electric fan in the cabinet at a predetermined rate of operation during deactivation of said compressor when the inside temperature set by said temperature setting means is less than a predetermined temperature; and

second fan control means for decreasing the rate of operation of said electric fan in accordance with a decrease of the temperature of outside air detected by said ambient temperature detection means during deactivation of said compressor when the inside temperature set by said temperature setting means is more than the predetermined temperature.